

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-028104**Date Inspected:** 04-Aug-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Julian Razo**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 13W/14W-LS5N deck stiffener flange inside, QA randomly observed ABF/JV qualified welder Lou Xiao Hua continuing to perform PJP groove welding root pass to fill pass on the deck stiffener flange T-joint. The welder was observed perform manual welding in the 4G (overhead) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E9018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1162-4. The stiffener flange plate has a bevel groove being welded PJP T-joint to the longitudinal stiffener. The plates were preheated to more than 200 degree Fahrenheit using Miller Proheat 35 Induction Heating System. During welding, ABF Quality Control (QC) Julian Razo was noted monitoring the welding parameters of the welder with measured working current of 125 amperes. During the shift, fill pass welding was still continuing and should remain tomorrow. The welder held the same preheat of >200 degree Fahrenheit for three hours after welding as required.

At OBG 13W-WK- SK1 plate inside, QA randomly observed ABF/JV qualified welder Chao Tran perform CJP groove welding root pass to fill pass on the K plate skewed butt joint. The welder was observed perform manual welding in the 2G (horizontal) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E9018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1072. The SK plate being welded to the 485W longitudinal stiffener has a single V groove butt joint preparation with ceramic backing. The plates were preheated to more than 200 degree Fahrenheit using

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Miller Proheat 35 Induction Heating System with the heater blanket put in place the back of the SK plate being welded. During welding, ABF Quality Control (QC) Julian Razo was noted monitoring the welding parameters of the welder with measured working current of 125 amperes. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

At OBG 13W-W2.1 @ 10,100 drop-in top deck plate inside, QA randomly observed ABF/JV qualified welder Rick Clayborn continuing to perform CJP groove welding repair from location Y=0mm to Y=2000mm. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repairs. This repair has been excavated and being welded with Caltrans approved Request for Weld Repair (RWR) #201207-016. Since the area from Y=0mm to Y=2000mm has numerous UT detected defects with various sizes and depths, the welder decided to excavate the whole length between two floor beams PP121.5 and PP122. The repair excavation was preheated to more than 325 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket put in plate on top of the deck prior/during welding. During the shift, ABF QC Julian Razo was noted monitoring the welder with measured working current of 135 amperes on 3.2mm E7018H4R electrode. At the end of the shift, repair welding at location mentioned above was partially completed and the welder performed the Post Weld Heat Treatment (PWHT) of 450°F where repair was completed and held it for one hour as required.

At OBG 13W-PP122.2 @ 8650 drop-in top deck plate inside, QA randomly observed ABF/JV qualified welder Richard Garcia perform CJP groove welding repair. The welder was observed welding in the 4G (overhead) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1004-Repairs. According to ABF QC William Sherwood, ABF went ahead and performed the repair R4 without the approved Request for Weld Repair (RWR) per ABF QC Manager Jim Bowers instruction. Mr. Sherwood also relayed to this QA that per Mr. Bowers, there was already a discussion between ABF and Caltrans and that ABF is just waiting for the approval of the forwarded RWR to Caltrans. The repair excavation was preheated to more than 225°F using Miller Proheat 35 Induction Heating System with the heater blanket put in plate on top of the deck. After the completion of the air arc gouging and smooth grinding on the UT detected defects, ABF QC Julian Razo performed the verification on the removal of the defects using Magnetic Particle Testing (MT) with no relevant indication noted. This QA verified the same excavations with noted same results. During the shift, ABF QV Julian Razo was noted monitoring the welder with measured working current of 128 amperes on the 3.2mm E7018H4R electrode. The welder pumped up the preheat to more than 325°F during welding then performed the Post Weld Heat Treatment (PWHT) of more than 450°F for one hour after welding as required. The following repairs were noted excavated and welded during the shift;

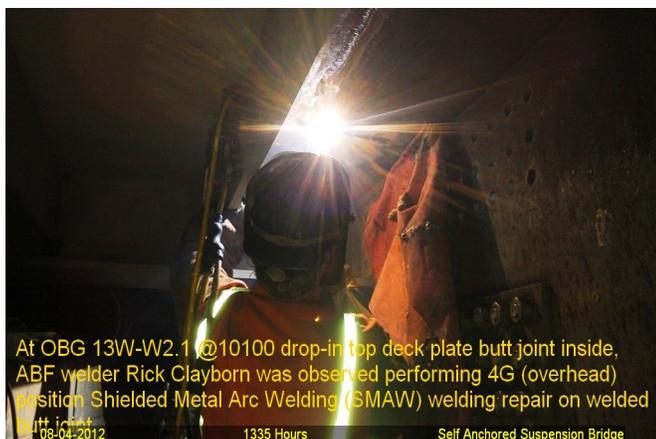
Y-location	Length	Width	Depth	Remarks
1. 7935mm	100mm	25mm	8mm	Completed.
2. 5880mmR4	85mm	25mm	9mm	Completed.
3. 7935mm	100mm	25mm	8mm	Completed.

At OBG location 13W-PP122.5-W3 longitudinal diaphragm WT12 stiffener inside, this QA randomly observed ABF welder Lin E. Yun perform CJP welding of the above mentioned stiffener. The welder was noted welding in 2G (horizontal) position using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018 H4R electrode implementing Welding Procedure Specification (WPS) ABF-D15-1040A Rev.1. The WT stiffener flange splice butt joint being welded has a single V groove prep that will be back gouged. The fit up was checked by ABF QC

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Julian Razo and randomly verified by this QA. During welding, the welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. ABF QC Julian Razo was noted monitoring the welding parameters with measured working current of 125 amperes during welding. At the end of the shift, cover pass welding was completed on one side.



Summary of Conversations:

According to ABF QC William Sherwood, ABF went ahead and performed the repair R4 at Y=5880 without the approved Request for Weld Repair (RWR) per ABF QC Manager Jim Bowers instruction. Mr. Sherwood also relayed to this QA that per Mr. Bowers, there was already a discussion between ABF and Caltrans and that ABF is just waiting for the approval of the forwarded RWR to Caltrans.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer